

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of )  
Charles F. Fritter et al. ) Art Unit: 3644  
Serial No.: 10/618,401 ) Examiner: Kimberly S. Smith  
Filed: July 11, 2003 )  
Title: COMPOSITE PARTICLE ANIMAL )  
LITTER AND METHOD THEREOF )

**DECLARATION OF CHRISTINA M. BORGESE  
AND MARC PRIVITERA UNDER 37 C.F.R. § 1.132**

We, Christina M. Borgese and Marc P. Privitera, hereby declare as follows:

1. I, Christina M. Borgese, received a Bachelor of Science degree in Chemical Engineering from the University of California at Santa Barbara in 2005. I am employed by The Clorox Services Company (“Clorox”), assignee of the above-identified patent application. I have worked on litter composition and process research and development at Clorox since 2005, specializing in agglomeration process work since 2006.
  
2. I, Marc P. Privitera, received a Bachelor of Science degree in Chemical Engineering from the University of California at Santa Barbara in 1986. I am employed by Clorox, assignee of the above-identified patent application. I have worked on litter composition and process research and development at Clorox since 1988, specializing in agglomeration process work for the past ten years.

3. We are familiar with US Patent 5,638,770 to Peleties ("Peleties"). Peleties in col. 1, lines 60-62 states:

**Preferably, the bentonite clay is calcium bentonite clay. The bentonite clay may however be sodium exchanged bentonite clay or a mixture of both types of clay.**

The example outlined in col. 2, line 31-col. 3, line 4 combines and extrudes calcium bentonite clay and expanded perlite.

4. We attempted to practice the teachings of Peleties using the example outlined in col. 2, line 31-col. 3, line 4 of Peleties as a guide.

#### **EXAMPLE**

Natural calcium bentonite clay was excavated, crushed into small particles, and stones and other foreign matter were separated from the small particles. Fine particles of perlite ore were expanded in a furnace until the perlite particles had a bulk density of 80-120 Kg cubic metre.

The calcium bentonite clay and the expanded perlite were fed through two separate feeders into a trough mixer, whilst adding water to create a wet mass having a moisture content 20-30% by weight. The wet mass was then fed into an extruder under a pressure of 20-25 bars. The extruded mass was in the form of macaroni sticks having a diameter of 8-20 mm.

The macaroni sticks were passed through a dryer to reduce the moisture content of the macaroni sticks down to 5-12% by weight. The dried macaroni sticks were then piled up and left to cool. The cooled macaroni sticks were then crushed and screened to granules of the following sizes:

**0.5-7 mm**

**0.5-5 mm**

**0.5-2 mm**

**The obtained pet litter material was placed in a litter container in the form of a plastics tray. The pet litter material was placed to a height of 50-70 mm.**

5. We combined and extruded expanded perlite and sodium bentonite clay ("sodium bentonite") instead of calcium bentonite clay following the above-referenced procedure as closely as possible using pilot plant scale equipment. We combined 500g sodium bentonite and 50g expanded perlite per batch. Water was added to a Leistritz twin screw extruder fitted with a die 16mm in diameter and the sodium bentonite/expanded perlite combination was extruded under approximately 8 bars of pressure. Contrary to the example in Peleties, 20-25 bars of pressure could not be attained. Pressures higher than 8 bars caused the material to cease passing through the extruder. The 16mm diameter extruded sticks were cut to approximately 6"-8" long pieces, dried and cooled.
6. We made several attempts to crush the extruded sticks to the size ranges disclosed in Peleties col. 2, lines 44-50:

**The macaroni sticks were passed through a dryer to reduce the moisture content of the macaroni sticks down to 5-12% by weight. The dried macaroni sticks were then piled up and left to cool. The cooled macaroni sticks were then crushed and screened to granules of the following sizes:**

**0.5-7 mm**

**0.5-5 mm**

**0.5-2 mm**

7. The batches of the extruded sticks were crushed down from roughly 6"-8" lengths to 1/2"-1" chunks using a hammer. Several methods were attempted to crush the chunks into material within the above-referenced sizes dictated by the patent.
  - a. The initial method involved continued crushing of the chunks with the hammer and screening through a US sieve No 4 and on a US sieve No 35 in accordance with the 0.5 - 5 mm screening range reported. Continued hammering broke down

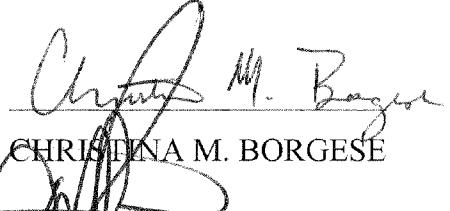
the smaller chunks to be smaller than 0.5mm while leaving the larger chunks roughly the same size. This issue was remedied by utilizing an iterative screening process that allowed the on-size granules to pass through the mesh while leaving the larger pieces (“overs”) for continued processing. The process was not continuous because the mesh was not strong enough to withstand the forces of the hammer. The material was hammered and moved to the sieve. The overs were then returned to the hammering pan.

- b. The next method involved utilizing a bench scale hammer mill. The extruded sticks were screened prior to entering the hammer mill using a screen having hole diameters of approximately 4-5mm. Almost all of the processed extruded stick material turned into a fine powder once they were processed by the hammer mill.
- c. Subsequently, the bench scale hammer mill was utilized using a larger pre-screening sieve having hole diameters of approximately 20mm. These holes allowed most of the chunked material to pass through. However, once processed by the hammer mill, the majority (>90%) of the processed extruded sticks again turned into powder.
8. The type of equipment we used is well known in the art. It is our opinion that one of ordinary skill in the art based on the disclosure of Peleties would expect that the method(s) we employed to replicate the results reported in Peleties would be successful.
9. We found that the extruded sticks of sodium bentonite and expanded perlite were destroyed by any attempt to use conventional shearing or crushing methods to form appropriately sized granules (i.e., granules corresponding to the sizes disclosed in Peleties col. 2, lines 49-50).
10. The properties of sodium bentonite clay and calcium bentonite clay are different. Sodium

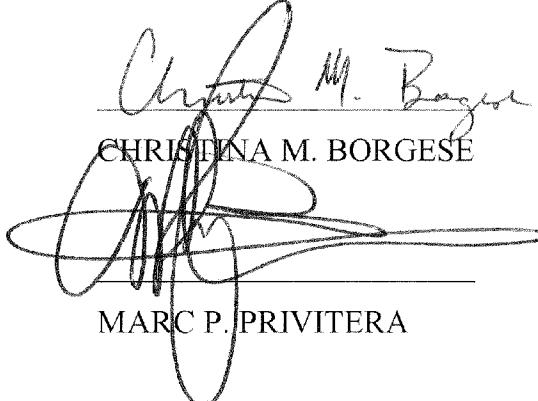
bentonite swells upon contact with water to a greater degree than calcium bentonite. It is our opinion that the difficulties we experienced trying to utilize the process described in Peleties to form a mixture of sodium bentonite clay and expanded perlite were a direct result of the properties of the sodium bentonite clay.

11. In conclusion, it is our opinion that Peleties cannot be practiced using sodium bentonite clay as disclosed for cat litter applications.
12. We, CHRISTINA M. BORGESE and MARC P. PRIVITERA, declare that the foregoing statements of fact made from personal knowledge are true and correct; that statements made on information and belief are believed to be true; and that willful false statements and the like so made are punishable by fine or imprisonment or both under §1001 of Title 18, United States Code, and may jeopardize the validity of this application or any patent issuing therefrom.

Dated: August 6, 2007



CHRISTINA M. BORGESE



MARC P. PRIVITERA